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TRI-PARTY AGREEMENT

Change Notice Number

TPA-CN- 657

TPA CHANGE NOTICE FORM

Date:

7/6/2015

Document Number, Title, and Revision:

DOE/RL-96-84, Rev 0 and Rev 0-A, Remedial Design Report and Remedial Action Work Plan for the 100-HR-3 and 100-KR-4 Groundwater Operable Units' Interim Action

Date Document Last Issued:

September 1996

0045844 and 0059675

Originator: Kris Ivarson

Phone: (509) 376-1941

Description of Change:

DOE/RL-96-84, is being updated to allow for single use, high capacity, ResinTech SIR-700 ion exchange resin as an approved alternate resin for use within the DX and HX groundwater pump-and-treat systems.

M.W. Cline

and

N. Menard/ C. Guzzetti

agree that the proposed change

DOE

Lead Regulatory Agency

modifies an approved sampling and analysis plan and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, Documentation and Records, and not Chapter 12.0, Changes to the Agreement.

Text within DOE/RL-96-84 is updated to include SIR-700 ion exchange resin, as an alternate resin, at the pump-and-treat systems for the 100-HR-3 groundwater OU pump-and-treat systems, DX and HX.

Note: Added text is denoted by double underline. Deleted text is denoted by ~~strike-through~~. Page 3-16 affected by the change is attached.

Justification and Impacts of Change:

The use of SIR-700 has been shown through testing and facility operation to be advantageous compared to Dowex 21 K. Significant cost savings will be realized due to less resin used, fewer resin changes, and potential elimination of the requirement for off-site shipment and regeneration.

Approval of the use of SIR-700 was previously given for the Supplement to the 100-HR-3 and 100-KR-4 Remedial Design Report and Remedial Action Workplan for the Expansion of the 100-KR-4 Pump and Treat System (DOE/RL-2006-75) through TPA-CN-505 specific to the KR-4 pump and treat system.

Approval of this change notice documents Washington State Department of Ecology and U.S. Environmental Protection Agencies approval of the use of SIR-700 resin at the 100-HR-3 OU pump and treat systems, DX and HX.

Approvals:

DOE Project Manager

7/7/2015

☒ Approved ☐ Disapproved

EPA Project Manager

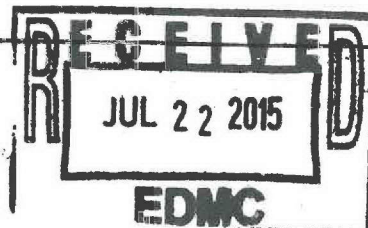
7/20/15

☒ Approved ☐ Disapproved

Ecology Project Manager

7/16/15

☒ Approved ☐ Disapproved



and testing of spent resin prior to disposal is presented in Chapter 5.0 of this document and will be presented in an Operations Waste Management Plan.

3.4.4.1 Ion-Exchange Modules. The interconnecting piping will be configured to allow series flow through three or four vessels with any of the vessels as the first (or lead) vessel. Design service flow rate through each module will be 380 L/min (100 gal/min) with service flow direction downward through each vessel. At design service flow rate, pressure drop across four vessels in series will not exceed 276 kPa (40 lb/in²) with water at 1.7 to 26.7°C (35 to 80°F). Valves for aligning the vessels in different operating configurations will be manually operated. Each vessel will be equipped with a relief valve discharging to a common return header. Each module outlet pipe will be equipped with a manually operated valve for flow balancing.

3.4.4.2 Resin Loading System. The resin loading/removal system has been designed to allow the treatment system to continue operating during routine changeout procedures. The resin loading system will use treated water (from tank T-H02) to sluice (slurry) fresh resin into any vessel using a common transport header. Excess sluice water will be simultaneously removed from each vessel and returned to the process system (to tank T-H01). The resin loading system has been designed to minimize labor in emptying/sluicing fresh resin supplied in 0.14-m³ (5-ft³) fiber containers. Compressed air will not be used for any phase of resin loading.

3.4.4.3 Resin Removal and Dewatering System. Treated water (from tank T-H02) will be used to sluice exhausted resin from any vessel to a dewatering device using a common transport header. The dewatering device will have a porous surface to retain exhausted resin and fines. Water removal will be by gravity drainage. Resin removal from the dewatering device will be performed by the operators. Drained water from the dewatering device will be returned to the process system (to tank T-H01). Components of the resin removal/dewatering system will be protected from unsafe operating conditions (overflowing, running dry, etc.) by automatic protective features. The use of a PLC to control system functions will be considered. Compressed air will not be used for any phase of resin removal or dewatering.

3.4.4.4 Backwash System. Treated water (from tank T-H02) will be used to backwash (expand by 50%) any ion-exchange vessel resin bed. Backwash water from any ion-exchange vessel will return to tank T-H01 via a common header equipped with a screened trap. The backwash system may be an integral part of the systems described in Sections 3.4.4.2 and 3.4.4.3. Compressed air will not be used in any phase of resin backwash.

3.4.4.5 Resin Type. The type of resin used in each of the groundwater treatment systems will be periodically evaluated for performance and cost effectiveness. During the course of the interim action, changing groundwater characteristics, resin availability and cost, or development of new resins may justify a change in the resin used. Prior to changing the resin type, supporting information will be provided to the regulatory agencies to demonstrate the basis for the change. Based on the successful resin testing and operations conducted at 100-KR-4 groundwater OU, ResinTech SIR-700™ is approved for use at 100-HR-3 groundwater OU, which includes the DX and HX pump-and-treat systems.